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December 18, 2007

TO: WISCONSIN ASSEMBLY COMMITTEE ON ENERGY AND UTILITIES

FROM: Lisa Moller, Senior Security Specialist, American Transmission Co.

RE: AB 560

Thank you very much for the opportunity to testify today in support of Assembly Bill 560. My name is Lisa Moller, and I am a senior Security Specialist at American Transmission Co.

American Transmission Co. LLC owns, operates and maintains the high voltage transmission system in the eastern two-thirds of the state of Wisconsin, most of the Upper Peninsula of Michigan and portions of Illinois and Minnesota. We own 9,100 miles of transmission lines and over 480 substations.

As the cost of scrap metal has increased in the past several years, we have seen a dramatic increase in the theft of assets at our substations. We and the other local distribution companies have experienced dozens of break-ins and metal thefts in our substations throughout our service territory. The individuals committing these thefts are becoming increasingly more aggressive as the price of copper, and other metals, continues to rise. Just recently, for example, over \$10,000 dollars worth of copper cable was stolen from a substation in the Fox Valley.

In addition to the cost of the physical assets stolen from our substations, our security personnel have devoted hundreds of hours to the growing problem of metals theft. We have also worked closely with law enforcement throughout our service territory as these thefts have taken place.

The main problem that we have observed in our work with law enforcement on this issue is that very little, if any, paperwork exists at any of the scrap yards that are ultimately buying our stolen assets. This is a major impediment in trying to recover our assets, and that is why we strongly support AB 560 as a major step in improving the recordkeeping required at scrap yards.

Finally, beyond the cost issue alone, ATC is even more concerned with the electric reliability and safety issues associated with these break-ins at our substations. The individuals are putting the electric system, and themselves, at risk. For example, wire and cable have been removed from energized facilities. This kind of action can impact the electric transmission grid locally and regionally. In addition, in Southern Wisconsin, a person was fatally electrocuted after breaking into a substation.

We support the prompt passage of Assembly Bill 560.



Testimony by Paul DeCoursin  
Manager of Substation Engineering and Transmission Support

**AB 560**  
Assembly Committee on Energy and Utilities  
December 18, 2007

My name is Paul DeCoursin, my job title is Manager of Substation Engineering and Transmission Support. We Energies has over 1.1 million electric customers in Wisconsin, and Upper Michigan. Our system contains 361 substations and distribution facilities that include over 700,000 poles, 22,000 miles of overhead lines, and 17,900 miles of underground lines, and thousands of other electrical devices – copper has been and continues to be an integral component of these facilities.

Copper theft has become a dominant issue for our utility within the recent years – its impacts are on safety, reliability and cost. The removal of copper facilities presents a safety danger to our employees, and the public who may happen upon our unmanned facilities that have been breached. Similarly, the reliability of our distribution system can be compromised without essential electrical components that are required to maintain the integrity of our service and protective systems.

Since 2005, 47 individuals that have been arrested for trespassing or copper theft – 3 individuals were arrested more than once. . Besides substations, numerous distribution poles have had copper grounds cut and removed.

In 2007, we experienced a surge in copper theft in substations within the metro Milwaukee area that diverted significant resources to remediation of this problem. There were 22 incidents of substation copper theft within the first 6 months of 2007.

We responded to this problem with various approaches including:

- contracted security personnel, employees and forestry contractors were asked to patrol substations in the affected areas of Milwaukee;
- covered exposed copper facilities with gravel;
- use of manual and automatic area lighting was increased at substations;
- enhanced protective guards were put in use for covering the copper ground lead on our poles;
- devised a remote reporting surveillance device to move among facilities.

All these activities have cost We Energies \$169,000 YTD.

More importantly, We Energies realized that copper theft would require the involvement of more than our own utility personnel.

Realizing that we could leverage the neighbors to our facilities, we performed a door to door outreach program with neighbors at 4 high-risk substations asking for their assistance with reporting any suspicious behavior and alerting them to the problems with copper theft.

In August of 2007, We Energies held a Copper Theft Summit attended by Law Enforcement and Prosecutors from Milwaukee and Waukesha Counties, and

local Recycling industry leaders to review the types of utility copper products stolen and emphasize the importance of prosecuting copper theft cases work with local recycling industry leaders to identify, track and report on suspected sellers of stolen utility copper.

Similarly, and the reason for being here, we knew that current legislation needed to be enhanced to increase criminal penalties for copper theft, relate the penalties to replacement costs versus scrap value, and refine the definitions of the materials and personnel that are involved with the scrapping of stolen ferrous and non-ferrous metals. We Energies has participated in the creation of this legislation and supports its passage.

We feel that this is an important step to diminish this present problem of copper theft that stands to create undue dangers for personnel and the public, and redirects resources, both in terms of personnel and money, to activities that do not enhance our electrical service.



**Assembly Bill 560: Scrap Metal**  
**Testimony of Chuck Callies, Dairyland Power Cooperative**

My name is Chuck Callies, and I am the Vice President—Power Delivery for Dairyland Power Cooperative (Dairyland). Dairyland is headquartered in La Crosse, and supplies electric energy to its distribution cooperative members and municipal utilities over its approximately 3,132 miles of transmission lines. The following testimony provides general information regarding copper thefts that have occurred at Dairyland facilities. Over the last 18 months, Dairyland has had copper stolen in break-ins at 13 of its or its members' facilities. Eleven of those facilities were 69,000 volt substations. In general, the value of the copper removed is minimal. Of significant concern, however, are the safety risks to the general public and to Dairyland employees when copper grounding is removed from those substations.

The exposed copper inside substations that is vulnerable to theft is normally contained in the ground wires that connect security fencing, ground mats, and physical substation equipment to the buried electrical ground grid under substations. These ground wires prevent electrocutions by ensuring that the electrical potential of fence and substation equipment is the same as the earth in areas approachable by employees or the public (in the case of fencing).

When ground wires associated with, and around energized equipment is cut or removed, the risk of electrocution increases significantly to the public. When substation gate locks are cut or broken, or fences are cut, the threat to the general public following a theft in a substation is increased because the general public now has access to potentially dangerous areas. The theft of ground wires for their copper greatly increases the risk of electrocution. Power company employees also rely on this same grounding equipment to protect them when working on or around energized equipment.

It was initially noted that the cost of the copper that is typically stolen is minimal. However, the labor and materials required to repair compromised facilities is not. Theft of two to three hundred dollars worth of copper at a substation often results in an immediate cost to the utility of approximately \$1,000 or more for repairs. Recurring costs are now being incurred by power companies as a result of procedures and requirements to inspect all grounding in substations upon entry to ensure that the grounding has not been compromised before any activities at that substation may begin.

Power companies and law enforcement authorities can do only so much with monitoring facilities and quickly identifying compromised facilities. Eliminating the market for the sale of stolen copper would, we believe, significantly help reduce the theft of copper from power company facilities and enhance the safety of the public and utility workers. As long as the value of copper remains high, the support and cooperation of "scrap markets" in dealing only with copper that is lawfully owned is necessary to help deter copper thieves.

**Attachment: Unauthorized Entry and/or Copper Theft at Dairyland's or its Members' Facilities**

## **Unauthorized Entry and/or Copper Theft at Dairyland's or its Members' Facilities**

1. **Seymour Distribution Substation (69kV):** This theft occurred while the substation was under construction. Thieves cut the new copper tails for the fence that was to be installed. (Eau Claire Energy) 6/06
2. **Weston Microwave Site:** Copper stolen from fence/tower. (Dairyland) 7/06
3. **Elk Creek Distribution Substation (69kV):** Lock was cut, no theft occurred. (Riverland Energy) 7/06
4. **Gilmanton Distribution Substation (69kV):** Shack door was reported open by Riverland. Couldn't find where entry occurred. Nothing was taken. (Riverland Energy) 8/06
5. **Brunswick Distribution Substation (69kV):** Copper stolen off fence/regulators/arresters. Tried to pull up the ground grid. (Eau Claire Energy) 9/06
6. **Cochrane Distribution Substation (69kV):** Shack door reported open. Couldn't find where entry occurred. Nothing taken. (Riverland Energy) 9/06
7. **Lookout Distribution Substation (69kV):** Lock was cut, no theft occurred. (Riverland Energy) 9/06
8. **Equity Distribution Substation (69kV):** Copper stolen off fence and Oil Circuit Recloser (OCR) pad. Couldn't find where entry occurred. (Eau Claire Energy) 10/06
9. **Union Distribution Substation (69kV):** Copper stolen off fence and transformer pad. Couldn't find where entry occurred. (Eau Claire Energy) 11/06
10. **Dairyland Service Center / Pole Yard:** Fence cut and scrap wire stolen. (Dairyland) 11/06
11. **Lublin Transmission Substation (69kV):** Fence cut, no theft occurred. (Dairyland) 6/07
12. **Strum Distribution Substation (69kV):** Lock was cut, copper cut off fence and legs of steel. (Riverland Energy) 6/07
13. **Clifton Lake Distribution Substation (69kV) -** Lock was cut, copper stolen off reel (took a piece of pipe, stuck in reel, unrolled the wire and cut in pieces) gate was found opened by DPC line crew. (Oakdale Energy) 6/07

**Wisconsin Institute of Scrap Recycling Industries (WISRI)**  
**Testimony in Opposition of AB 560**  
**December 18, 2007**

Chairman Montgomery and members of the Assembly Committee on Energy and Utilities, my name is Jordan Lamb and I would like to thank you for allowing David Borsuk, Darren Engbring and me to testify today on behalf of the Wisconsin Institute of Scrap Recycling Industries (WISRI). Although WISRI supports legislative solution to the problem with the sale and purchase of stolen scrap materials, WISRI is opposed to AB 560 for the specific reasons stated below.

WISRI is a trade association that represents approximately 25 scrap dealers throughout the State of Wisconsin. WISRI members are committed to seeking out a legislative solution to the problem of the sale of stolen scrap metal. Accordingly, we desire to work cooperatively with law enforcement to achieve this end.

We have met with the Wisconsin Utilities Association, the Wisconsin Electric Cooperatives and other members of the coalition that is supporting this legislation and we believe that we have achieved resolution of several of our concerns. However, as it is currently drafted, we cannot support AB 560. However, we believe that this legislation can be amended such that it will both solve the scrap theft problem and allow our members to continue to operate effectively and efficiently.

The following are our primary concerns:

- **Retail v. Commercial Transactions**

AB 560 applies to *all* scrap metal transactions, regardless of whether they are business-to-business transactions ("commercial") or individual transactions ("retail"). (Page 5, lines 1-10).

We request that the authors limit the application of this legislation to retail transactions with individuals. The distinction between commercial and retail transactions is important because we believe that the majority of sales involving stolen scrap materials are made by individuals, not, for example, made by commercial entities such as construction companies or public utilities. In addition, commercial transactions typically are large volume transactions. Requiring the increased documentation for these loads is unlikely to assist in solving the scrap theft problem that this legislation is intended to address.

- **Descriptions of Materials**

AB 560 requires a dealer to record, "A description of any numbers, letters, or other identifying symbols stamped, engraved, stenciled or otherwise marked on the scrap articles." (Page 5, lines 21-22).

We request that the authors allow the use of industry terms as opposed to requiring recordation of all markings on a particular item, allows dealers to make a record of a transaction in terms that are well-understood by the industry and also eliminates the administrative burden of, for example, recording marks from each 3-foot section of a spool of copper wire that is sold. These markings are not unique to utilities and do not differentiate ownership.

- **Inspection of Records**

AB 560 requires a dealer to make transactional records, "available to a law enforcement officer or an agent of a governmental entity, telecommunications provider, public utility, cable operator, as defined in s. 66.0419 (2) (b), or an entity that produces, transmits, delivers, or furnishes electricity, or transportation, shipbuilding, ship repair, mining, or manufacturing company who presents the agent's credentials at the scrap metal dealer's place of business during business hours." (Page 6, lines 15-23).

We request that the legislation be amended such that only law enforcement officials or governmental agents are permitted to inspect our business records. Allowing agents of other business entities, such as telecommunications providers and utilities, to inspect a scrap dealer's records is inappropriate and will not assist in the prosecution of scrap metal thieves or in the reduction of scrap metal theft. This information is useful to law enforcement officials and governmental agents who are empowered to prosecute criminals.

- **Video/Photographic Images**

AB 560 requires a scrap metal dealer to obtain "...photographic or video images showing the vehicle's license plate and a view of the vehicle sufficient to identify the vehicle." (Page 5, lines 23-24).

We request that this requirement be deleted. Requiring photographic or video images of vehicles and license plates could be financially difficult for small scrap dealers and will require an immense amount of electronic storage space for all scrap dealers (assuming that these records must also be retained for 2 years). Scrap yards are not laid out to have a single point to photograph or tape vehicles. In addition, it is unclear to us whether these images will provide useful information to law enforcement officials more than a few days after a transaction. WISRI members are willing to work with law enforcement to provide information that may assist in the prosecution of individuals that steal scrap. In SB 225, part of the recordkeeping requirements is to record the individual's plate number of the vehicle used to bring the scrap to the scrap processor.

- **Statewide Uniformity**

AB 560 allows local political subdivisions to be more restrictive than the requirements provided in the legislation. (Page 7, lines 23-25).

Many scrap dealers have multiple locations in different municipalities. If each municipality is allowed to have different record requirements would be difficult to maintain records in a consistent manner and would place a large administrative burden on scrap companies.

In order to provide both scrap dealers and law enforcement with a set of requirements that are uniform statewide, we seek statewide consistency with regard to the recordkeeping and retention requirements associated with scrap metal transactions.



# **\$1,000 VANDALISM REWARD**

For information leading to the conviction of anyone for willfully damaging the property of electric co-ops headquartered in Wisconsin or willfully damaging property resulting in interruption of service to members of electric co-ops headquartered in Wisconsin.

Information should be conveyed to your local law enforcement officials, to your electric co-op, or to the:

WECA Division  
Wisconsin Federation of Cooperatives,  
131 W. Wilson St., #400  
Madison, WI 53703  
Telephone 608-258-4400

Assembly Committee on Energy and Utilities  
Testimony in support of AB 560 Scrap Metal Theft  
Dec. 18, 2007

Mr. Chairman and Members of the Committee, thank you for an opportunity to testify on this bill. My name is Beata Kalies. I represent all 25 of Wisconsin's electric cooperatives, which distribute electricity in primarily rural areas of the state and one member cooperative, Dairyland Power, which generates the power used by most of the other co-ops. Joining me today is Chuck Callies from Dairyland and he has testimony to present as well.

Having scrap metal stolen is nothing new, especially for a commodity such as copper that can be easily converted to cash, and has a market value of at least \$3 per pound. What is new is that the thefts are increasing and the thieves are taking on greater risks to obtain the metal.

To prevent theft, many co-ops have undertaken preventive measures by installing additional fences, surveillance equipment, burglar alarms, providing enclosed and locked storage facilities wherever possible and offering reward money to apprehend vandals.

Our reward program has been in existence for over 20 years but it has been rarely used since it is difficult to catch thieves. The areas we serve are not heavily populated and some co-ops have more than one building at various sites to serve their larger geographic area. It is also not always possible to fence in our equipment or spools of wire because of their size and because the location changes as needed by the nature of the work project.

Even with secure storage, thieves have been known to cut through fences and break into locked buildings. What is needed is AB 560, which will help identify legitimate sellers and help law enforcement officers catch and prosecute thieves.

Tampering with utility equipment is dangerous and safety for our workers and the public is a great concern, as are the costs associated with repairing facilities and replacing the stolen metal. Fixing what has been damaged takes workers away from real duties. There is a provision in the bill to address the replacement value of the metal not just the scrap value.

At least 20 other states have enacted laws pertaining to this issue and many others are considering bills just like Wisconsin.

## Incidents of reported copper theft in electric cooperative service areas this past year:

### Alma Area (Riverland Energy Cooperative)

- A building was broken into and copper wire stolen worth @ \$1,600.

### Ellsworth Area (Pierce Pepin Cooperative Services)

- \$1,200 worth of copper wire on spools was stolen from a secure, fenced area at the headquarters.
- In two other situations, the meter was stolen and the vacant buildings were stripped of copper wiring and copper plumbing, valued @ \$500.

### Ladysmith Area (Jump River Electric Cooperative)

- 50 feet of underground wire was stolen from a job site, causing @ \$500 in damage.
- Second incident involved an elderly board member witnessing the theft and chasing after the thief to later identify the residence to the police but because the metal was long gone by the time police got there, no charges could be filed.

### Menomonie Area (Dunn Energy Cooperative)

- Warehouse was broken into through a cut in the garage door. Copper and a pick-up truck were stolen. The truck was later recovered in MN. Damage was @ \$15,300. An insurance settlement paid for new garage door but the copper was never recovered.

### Red Granite, Seven Sisters, and Coloma Areas (Adams-Columbia Electric Cooperative)

- 17 pole grounds missing. The value of the theft is over \$2,400 for labor and truck time to replace the missing pole grounds but only \$114 for the materials.

### Superior Area (East Central Energy)

- Two thefts of copper occurred this past summer with many more thefts at other locations.
- On Aug. 19<sup>th</sup>, the co-op headquarters buildings were broken into with not an inch of copper left. Forensics team was called in to dust for fingerprints but no one was ever captured.

### Wittenberg Area (Central Wisconsin Electric Cooperative)

- Two rolls of copper were stolen from a storage building. Valued @ \$500.

### Wautoma Area (Adams-Columbia Electric Cooperative)

- Catalytic converter cut off a utility truck at the substation



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**TO:** Members, Assembly Committee on Energy and Utilities

**FROM:** Bill Jordahl  
Alliant Energy - Wisconsin Power & Light

**DATE:** December 18, 2007

**RE:** Assembly Bill 560

Mr. Chairman and members of the committee, thank you for your consideration of Assembly Bill 560, relating to the purchase and sale of scrap metal and other metal items. We appear today in support of AB 560, and I want to thank Chairman Montgomery and Senator Plale, the coauthors of the bill, for their support of this important bill.

Alliant Energy has two utilities which operate in three state jurisdictions. Though today I will concentrate on our Wisconsin utility, Wisconsin Power & Light (WP&L), the problem of theft of metals - especially copper - from our facilities, infrastructure, and equipment is a problem across our territory. This problem has grown steadily over the past several years, as the value of copper and other metals have increased dramatically.

In the last three years we have identified 170 metal thefts. Starting in 2006, we took numerous preventive measures to respond to this problem. We now typically remove material from the field, use just in time delivery to job sites, use secure trailers, hardened padlocks, signs, education, cameras, better lighting, motion sensors, and increased patrols. We have still seen a steep rise in thefts.

Metal theft is a danger to the thief, our line workers, and members of the public. When a thief enters a substation, he or she is entering a space where high voltage lines are active. While thieves will be focused on the removal of grounding wires, they may get too close to high voltage lines, and they are not likely to be using safe tools or equipment. They are risking seriously disfiguring injuries, or death, for a few pounds of copper.

In addition:

- Removing copper grounding grids in substations creates serious dangers to our technicians and work crews when they visit the site.
- Removing copper ground wires from our poles endangers our line workers and the public. We now are stapling this wire to the pole, at intervals of six inches or less, to discourage theft.

- Theft from poles on the ground at job sites delays our projects and takes away from our ability to abide by our scheduled work, as does repairs at substations raided by thieves.

Alliant Energy WP&L supports AB 560 as a tool to slow trafficking in stolen metals. We are doing our part to tighten security, and adding a measure to remove the ability to easily turn metals to cash should further reduce this dangerous practice.

Thank you for your time and attention, and I am available to answer any questions.



MUNICIPAL  
ELECTRIC  
UTILITIES OF  
WISCONSIN

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TO: Assembly Energy & Utilities Committee  
FROM: David J. Benforado, Executive Director  
DATE: December 18, 2007  
RE: **MEUW Support of Assembly Bill 560**

On behalf of the public power utilities and communities in Wisconsin, we respectfully ask that Assembly Bill 560 be given a favorable vote out of the Committee.

The trend of metal theft has reached several of MEUW's Member Utilities. Many municipal utilities are small in size, who simply cannot afford to pass the cost of these crimes on to their customers. Attached is an article from the March/April 2007 issue of *Public Power* magazine from the American Public Power Association, highlighting the copper theft epidemic, which includes references to MEUW Member, Manitowoc Public Utilities.

While efforts are made to work with local law enforcement, and to tighten security on potential theft targets, the passage of AB 560 will give notice to metal theft perpetrators that Wisconsin organizations, including the recycling industry, are working together and cracking down on these crimes. AB 560 is a strong, comprehensive bill that is aimed at the entire issue of metal theft and the punishment for such crimes.

We applaud and appreciate the coalition of industries and organizations and the authors' efforts to bring AB 560 to this point, working with all sectors of the industry, and urge its passage by the full Legislature. Thank you for your consideration. Feel free to contact me or MEUW's Associate Director, Scott Meske at (608) 837-2263.

cc: Governor Doyle's Office

Attach.



# The Copper Theft EPIDEMIC

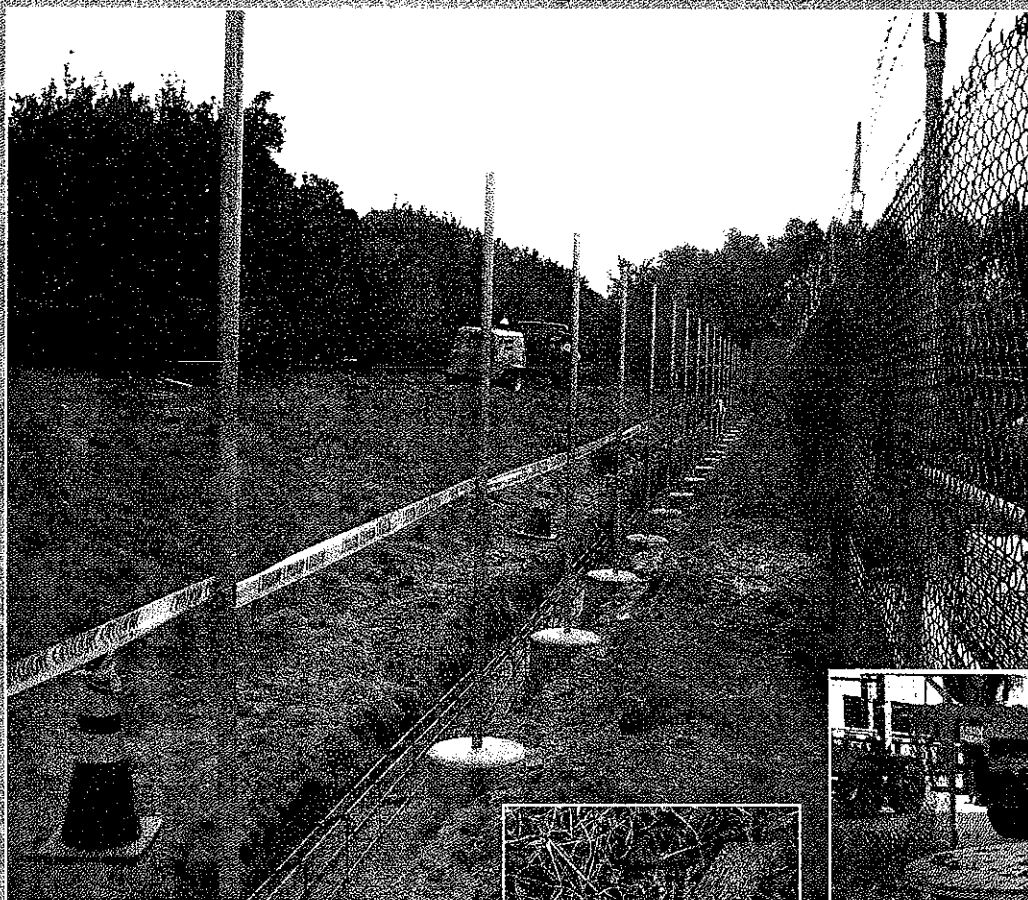
BY ALICE CLAMP

*Public utilities are beefing up security and working with law enforcement and scrap dealers to curb the theft of copper from their facilities.*

Last year, the Bonneville Power Administration lost roughly \$150,000 in copper materials to theft. But that loss was dwarfed by the cost of repairing the damage and replacing stolen cable.

"The cost of mobilizing field crews, taking power stations off line so they could work, puts the actual cost closer to \$1 million," said Carrie Reese, a BPA spokeswoman.

Hundreds of thousands of dollars worth of copper cable and grounding wire have been stolen from public power utilities



Riverside Public Utilities in California installed new expanded metal mesh fencing to deter thieves. Photo courtesy RPU.



Photo by Chris Gent, Kissimmee Utility Authority



Photo by Chris Gent, Kissimmee Utility Authority

over the last two years. While such theft is not a new phenomenon, it has proliferated as the price of this metal has soared. At the end of 2006, scrap copper could fetch up to \$3 a pound—depending on its condition and type—compared with less than a dollar just a few years ago. Although the price has slipped since then, copper theft remains a major problem for the nation's utilities.

Often, the thieves appear to know their way around an electrical system. "They know which wires they can clip, and which ones they can't," said Lance Robertson, who handles public relations for the Eugene Water & Electric Board in Oregon. Since late June 2006, four EWEB substations were the targets of thieves. The utility spent roughly \$40,000 to repair damage and replace copper grounding wire at the substations.

In Orlando, Fla., thieves stole underground copper wire for the city's streetlighting system. "The people removing wire from conduits have a skill set," said Al Frazier, president of corporate services at Orlando Utilities Commission. "They take it out artfully, and they know what markets to take the wire to."

A major copper theft at Manitowoc Public Utilities in Wisconsin was carried off by people who knew line work, said Jim Peterik, electric superintendent. He described the theft of eight spans of copper stranded line as a "very professional job." The thieves "knew exactly what they were doing, what to take and what not to take."

Sometimes, however, a thief makes a mistake. That happened at one of Clark Public Utilities' regulator stations in Clark County, Wash., last October. A man trying to steal some grounding wire was electrocuted.

A vandalized substation represents more than a cost burden to public utilities. It poses a major risk to the safety of utility employees and the public. Since a theft of grounding wire at one of its substations, Colorado Springs Utilities has changed its operating procedures, said Brian Anderson, Springs Utilities' substation operations superintendent. "Before we operate equipment, we open the gates. We look for the grounds and make sure they're installed on equipment."

**Improving security**—Like many other public power utilities that have been the victims of copper theft, Colorado Springs Utilities has enhanced security at its facilities, installing cameras and adding alarms.

Steps taken by utilities around the country embrace both low tech and sophisticated measures. They include:

- **Storing materials out of sight.** An obvious, but effective way of reducing theft is to store copper wire and cable where it cannot be seen. Nebraska Public Power District, for example, bought large containers in which to store equipment.

- **Removing materials from construction sites.** After an attempted theft in December 2006 of more than 1,000 feet of copper cable from Kissimmee Utility Authority in Florida, the utility began bringing material back from construction sites at the end of each working day. Similarly, after thefts of copper wire from two substation construction projects, Clark Public Utilities no longer leaves copper wire at construction sites.

- **Improved fencing.** California's Riverside Public Utilities has installed new expanded metal mesh fencing made of a metal that is difficult to cut, said Dave Redding, the utility's principal electrical engineer. It's expensive, he said, but seems to be effective. Some utilities, such as BPA and Washington's Cowlitz County Public Utility District, have installed razor wire on fencing. "It's expensive to purchase and install," said BPA's Reese. "But if it can offset one or two \$25,000-\$50,000 break-ins, it's cost-effective."

- **Storage yard access.** Snohomish Public Utility District No. 1 in Washington state simply fenced its storage yards in the past. But in the past two years, the utility has had 15 metal thefts, requiring more than \$28,000 in repair and replacement costs. "We've put in electronic access control at our storage yards," said David Behar, senior manager for security and emergency management.

- **Security perimeter.** Snohomish PUD has added something else to its storage yards—berms. The utility has built earthen barriers inside the perimeter fence, making it more difficult to roll a

large reel of copper wire out of the yard. Riverside Public Utilities has built a curb along the perimeter fence, so thieves cannot dig under it. Kissimmee Utility Authority is considering a creative deterrent for its storage yard: prickly shrubs. Even if thieves managed to cut through a fence, they would have to negotiate a hedge of thorny bushes.

- **Intruder detectors.** Numerous public power utilities have installed devices designed to detect intruders and track their movements. Orlando Utilities Commission, for instance, has intruder alert systems at most of its substations.

Denton Municipal Electric in Texas has installed temporary infrared alarms at a number of substations, and monitors them around the clock. That move paid off, said Jessica James, the utility's spokeswoman. "A few people broke into one of our substations that was equipped with an infrared alarm. Our dispatcher relayed the information to the police department, and one of the intruders was caught."

Electronic video surveillance can be expensive, but may be appropriate for some applications, such as isolated substations. If it is monitored 24/7, it can be effective. "But someone has to watch the cameras," said Riverside's Redding.

That's an issue the Utilities Board of Tuskegee in Alabama is wrestling with, said Mark Ennis, utility manager. "We're looking at the deployment of video cameras at our substations," he said. "But we don't have a 24/7 dispatch center, so we could not monitor the cameras around the clock."

Even monitored surveillance is not infallible. "We thought we were secure," said Roger Merriman, general manager of Peru Utilities in Indiana. But cameras at its storage facility failed to alert staff to a theft. "We're thinking about installing more surveillance cameras," he said.

Sometimes, it may be a matter of tweaking detection devices already in place. Because of the many vehicles parked in Kissimmee's storage yard, intruders were able to move among them without triggering the yard's motion detectors, said Chris Gent, Kissimmee's manager of corporate communications. "But if those detectors



## The Copper Theft Epidemic

were mounted at a higher point, they would look down on the yard and more likely be activated by intruders."

Utilities with contract security staff, such as Orlando Utilities Commission, rely on patrols of substations. Eugene Electric & Water Board has added patrols to its list of security measures. Tuskegee has boosted police patrols of the utility's five substations. And Clark Public Utilities launched 24-hour security at its substation construction site.

Bob Holland, a detective in the Eugene, Ore., police department's property crimes unit, said "it's almost incumbent" on utilities to provide their own security force, especially in rural areas where law enforcement cannot respond quickly enough to apprehend thieves.

**Detering theft**—Public power utilities are considering—and in some cases, have adopted—various ways of thwarting copper theft. Among them:

- **Utility stamp.** Some utilities, such as BPA, purchase cable with an identifying stamp. BPA has received calls from scrap metal dealers after some of its stamped cable was offered for sale, said the agency's Reese. But, she added, stamped cable is more expensive, and thieves can cut out the stamp.

- **Copper clad wire.** Numerous public utilities have opted for copper grounding wire with a steel core. Thieves at an OUC substation were not able to cut through this wire.

\*Cowlitz PUD in Washington state plans to start using copper-clad steel for its pole grounds, said the utility's John Dietz, director of engineering. "A thief would need bolt cutters to sever it," he said. And Snohomish PUD may consider the use of this wire at its substations. But Colorado Springs Utilities' Anderson said it's not clear whether this kind of wire would meet the need for ampacity. "When you make a change, it has cascading effects."

- **Galvanized paint.** Some utilities are spraying their copper wire with a galvanizing paint. That's what Springs Utilities did when it replaced stolen wire, said Anderson. After thefts at five of its substations, Cowlitz PUD sprayed a galvanizing compound on the replacement wires. "It makes

the wire look old, and may discourage thieves," said Dietz.

- **Color coding.** A creative approach to thwarting copper theft has been launched by a group of utilities in Lane County, Ore. Each member of the group, which includes the Eugene Water & Electricity Board, has chosen a color for spray painting its wire and cable. The color code would be provided to scrap dealers in the area. EWEB's Robertson noted that thieves might not be able to remove all the paint, so it could serve as a deterrent. And the spraying would be relatively inexpensive.

Color coding would also benefit law enforcement. "It provides a unique identifier," said Eugene police detective Holland. That could make it possible to charge a defendant with a felony rather than a misdemeanor.

- **Other.** Some utilities are turning to other metals. Riverside Public Utilities, for example, uses copper only in its substations. Elsewhere, it uses aluminum. And Tuskegee Utilities Board plans to replace copper with aluminum on some of its streetlight circuits.

**Consult an expert**—Some utilities have called in experts to help them determine and address vulnerabilities.

Colorado Springs Utilities asked the state's National Guard to assess its assets and determine if the utility was vulnerable. Springs Utilities also looked at what investor-owned utilities were doing to protect their facilities. "But for specifics on security solutions, it's good to have a consultant," said the utility's Anderson, "especially if you're spread out over a large area."

Riverside Public Utilities hired a consultant to conduct a thorough physical security study and make recommendations. The utility has implemented some of them, and plans to do more, said Redding. "We picked and chose from among many recommendations."

Contracting with a consultant is "a proactive step for any utility that wants to minimize interruptions in its system," said Orlando's Heston. OUC's consultant assessed the utility's access control and other issues. As a result, said Heston, "we've done things to harden the target."

OUC's Frazier cautioned against a one-time assessment by a consultant. "Your system will continue to evolve, and you need to be able to provide reliability. That means you need to continue adjusting your security system."

Tuskegee's Ennis said the utility might consider bringing in a consultant. "We're small and we're not security experts. We can't think like a thief, so we may be doing things that we shouldn't be doing."

Snohomish County Public Utility District in Washington relies on a security company for the design and installation of security equipment.

Because of the safety issues associated with the theft of copper wire and cable, utilities are making sure the public is informed. Some utilities, such as Springs Utilities and BPA, have launched outreach efforts, asking people to report anything suspicious. The effort is paying off, said Colorado Springs's Anderson. "Since we asked our citizen-owners to keep their eyes open, we've had a decrease in theft."

Snohomish PUD will use a bill stuffer to remind its customers about the danger inherent in vandalizing utility facilities. After a major storm last winter, PUD customers contacted the utility to report power line thefts. "They understand this kind of activity puts people at risk and slows the restoration process," said Neroutsos.

As encouragement, BPA will pay up to \$25,000 for information that leads to the arrest and conviction of anyone vandalizing utility property. Grays Harbor Public Utility District in Washington state offers a \$5,000 reward for information leading to the arrest and conviction of anyone caught stealing copper wire from the utility.

For many utilities, the public message is also one of safety. After a thief was electrocuted at one of its regulator stations, Clark Public Utilities relied on newspaper, TV and radio coverage to communicate the dangers of theft. That's a message Manitowoc Public Utilities drives home through its path-to-ground demonstration, which uses a 15,000-volt DC generator to enact a phase-to-ground contact. "We prefer to stress the danger," said Manitowoc's Peterik. "We're a small community, and times have been tough. We'd rather not remind

## The Copper Theft Epidemic

the public of the value of materials at our facilities."

**Cooperative activities**—Most public power utilities are sharing information and lessons learned about copper theft. Sometimes this is done through a joint action agency. Riverside discusses its copper theft experience with other utilities through the Southern California Public Power Authority's transmission and distribution committee. Snohomish PUD works with other utilities through the Western Energy Coordinating Council's security group. "We meet quarterly and share best practices," said Snohomish PUD's Neroutsos.

Representatives of BPA, EWEB and other utilities meet regularly, and invite local law enforcement officials to attend. "We're seeing more formalized groups of law enforcement and utilities," said BPA's Reesé. "We're emphasizing to law enforcement that theft from a utility represents a major safety hazard—to utility employees, passersby and those living near a substation."

After the attempted theft of copper wire

from KUA's storage yard in Florida, the utility turned over its security camera tapes to the sheriff's office, which sent someone to review the tapes with utility staff.

For OUC, cooperation with law enforcement is a given. The utility's director of security, Charlie Wright, is the former deputy chief of police in Orlando. "Because of our problems with copper theft, the police know to check out anything suspicious," he said.

If theft or vandalism occurs at any of NPPD's facilities, NPPD contacts the police immediately, providing a description and photos of the stolen material and a utility contact telephone number. In one case, this prompt action enabled police to make an arrest.

In addition to filing a police report, utilities often provide information on a theft to local scrap metal dealers. "We have given samples of our wire—which is unique to us—to recyclers in the area," said Cowlitz PUD's Dietz.

OUC, too, has provided samples of its wire and cable to local scrap metal dealers. As a result, the utility gets a call if any suspicious material is offered for sale. Whenever there's a theft, OUC alerts the dealers and tells them what to look for.

To promote cooperation, Manitowoc Public Utilities lets scrap metal dealers know the utility will buy back any materials sold to the dealer. And, said Peterik, "if they cooperate with us, they may get our business. We're relatively small, but we generate a tremendous amount of scrap metal." The utility produces a great deal of copper scrap. The value of #1 copper scrap alone is worth \$30,000 to \$50,000 a year, he said.

Snohomish PUD supplies a poster with color photographs of most copper and large aluminum conductors to all the scrap metal dealers in the area.

Sometimes this kind of cooperation pays off. When Peru Utilities was struck by thieves, it contacted four scrap metal dealers and asked them to be on the lookout for its copper wire. The utility got a call from Kelly Habayeb, president of Secondary Metals, who said he had purchased some material that matched the utility's description. Utility staff identified the wire as

belonging to Peru, and Habayeb gave them the sellers' license plate number. The police inspected the material, tracked down the thieves and arrested them.

**Roles and responsibilities**—Because of the price of copper, utilities should expect to suffer losses. But there are steps they can take to protect their assets.

It's important for a utility to identify where its copper inventory is stored and assess the risk of theft. Sometimes, utilities may not even know there has been a theft, said Eugene police detective Holland. In addition, scrap containers should be locked and monitored with security cameras. And the amount of copper wire stored on trucks should be limited and kept out of sight.

Ronald Niebo, reliability assessment and performance analysis coordinator for the North American Electric Reliability Corp., suggests doing the following:

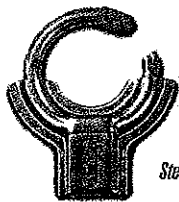
- Alert customers to the problem.
- Train utility staff to develop procedures for detecting and reporting theft.
- Post danger signs on utility facilities.
- Work with local authorities, including police.
- Interact with local scrap dealers.
- Provide news releases, offer rewards to the public for information.

NERC also suggests utilities undertake security upgrades, change materials to reduce attractiveness to thieves and take advantage of innovative technologies that allow unique identification of materials. Smartwater, a UK company, has developed an odorless, colorless liquid that a British utility uses to code copper in its substations.

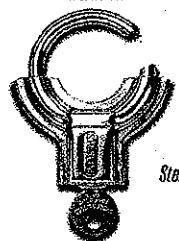
Utilities are encouraged to develop good working relationships with scrap metal dealers within a 50-mile radius. In the event of a theft, utilities should identify the items taken, get the police involved and—if the items were bought by a scrap dealer—not try to recover them without paying the dealer.

Shelley Padnos of Louis Padnos Iron and Metal in Michigan suggested that, in the event of a theft, the utility immediately contact the police and get a case number and an officer in charge of the theft. Next, the utility should contact all local scrap metal dealers with a description of the ma-

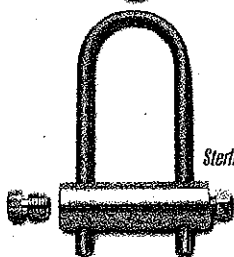
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terial and all the contact numbers. "Without a case number and police contact number, it is often difficult for scrap processors to have the police available in a timely manner," she said. Randy Katz, vice president of City Scrap and Salvage in Ohio, agrees. "There have been instances when the police have said: We haven't received a report of stolen material. If the utility doesn't report a theft, we can't help."

There are some items that are used only in the electric power industry, said Steve Hirsch, associate counsel and director of state and local programs for the Washington, D.C.-based Institute of Scrap Recycling Industries (ISRI). These items need to be distinguished from other types of copper wire that any homeowner can buy at a home improvement store, he said. "Some means of identifying the utility items would go a long way."

And if the utility gives details on stolen copper material to the police, officers can take that information to scrap metal dealers, said Greg Matthews, a sergeant in the Tulsa, Okla., police department's burglary division.

Eugene Water & Electric Board does just that, said the utility's Robertson. "We have used the Eugene police to get information on the type and size of wire used for grounding wire, guy wire and power lines to scrap metal dealers."

Utilities, also can report a theft to ISRI's Theft Alert program. ISRI, which represents many of the nation's scrap recycling companies, carries information on its Web site about reported thefts, and sends e-mails to recycling companies in the area of a theft (see page 20).

The Theft Alert program has helped one recycler in Texas. "Because of this program, we have recognized material coming into our facility," said Manny Bodner, president of Bodner Metal and Iron.

Recently, City Scrap's Katz did what he calls a reverse theft alert. "We received material that looked suspicious, so we sent information to 15 police departments in the region, asking if there had been any reported thefts."

That's the kind of behavior ISRI would like to encourage among its members. Last October, the institute issued recommenda-

## A Tool for Utilities: ISRI's Theft Alert

The Institute of Scrap Recycling Industries (ISRI) operates a Theft Alert program that gets the word out quickly about materials stolen anywhere in the country.

Any electric utility that has lost copper materials to theft can send an e-mail to [chuckcarr@isri.org](mailto:chuckcarr@isri.org), indicating the date and location of the theft and a description of the materials stolen. Any details on the color of the material, specific weights and serial numbers are helpful. If available, photos should be included. "Nothing is better than a photo," said Randy Katz, vice president of City Scrap and Salvage in Akron, Ohio, who helped to launch the electronic Theft Alert system.

When ISRI is notified about a theft, it sends a broadcast e-mail to dealers nationwide. It also posts the information on its Web site, [www.isri.org](http://www.isri.org). Just click on the Theft Alert bar on the left-hand side of the home page.

To use the system, a utility must have reported the theft to the appropriate law enforcement agencies.

tions on minimizing the risk of buying stolen materials. It advised dealers to collect enough information to identify a seller if a problem arises with the material purchased. That includes recording a driver's license number or other form of government identification, recording the license plate number of the vehicle the seller is driving, creating and recording a unique identification number for each customer and obtaining the seller's signature for each transaction.

A very limited, informal survey of some of the bigger scrap metal dealers around the country suggests those recommendations could be having an impact. "We were already doing about 90 percent of what ISRI recommended," said Manny Bodner. "But we hadn't been recording the license plate number of the seller, and now we're doing that."

Diversified Recycling, a small dealer in Washington state, records the license plate number and copies the driver's license of anyone selling less than \$100 worth of material. "For sales above \$100, we pay by check," said Neil Hunt, the manager.

Waste Control, a metal recycler in Longview, Wash., posts a board on its premises with samples of stolen utility material such as grounding wire. "If material like that on the board comes in, our people call the police and record the person's driving license and license plate number," said Rollie Ensign. "If we haven't had any reports of stolen material, but we're pretty sure a particular item is stolen, we'll refuse to buy it."

Some of the larger dealers employ tech-

nology to aid their record keeping. Last year, Louis Padnos Iron and Metal began scanning the driver's license of every seller. "The scanned license is preserved in our system as a part of the transaction, including the photo," said Shelley Padnos. Waste Control in Washington plans to set up a system that links any purchased item with the license plate number of the seller. "We'll be able to call up 'copper' on the system and print out a sheet with the plate numbers," said Ensign.

But ISRI's Hirsch pointed out that many scrap metal dealers cannot justify the expense of operating sophisticated scanning systems and maintaining computerized databases. That's why help from utilities in identifying copper materials will go a "long way" toward helping recyclers avoid purchasing stolen items, said Hirsch.

Not all scrap metal dealers are willing to work with utilities and the police, however. Waste Control's Ensign noted that while his company works with law enforcement and utilities to avoid buying stolen material, "there are other facilities that might take it."

Secondary Metal's Habayeb said he understands that there are dealers who don't cooperate. "But it's not excusable."

**A legislative response**—Some cities have rules on the books governing scrap metal dealers' operations. But the problem with a city ordinance, said Peru Utilities' Merriman, is that thieves will go to another jurisdiction to sell what they have stolen. "Such a piecemeal approach makes it harder to track down stolen material."

That's why Eugene detective Holland,

and others, are pushing for legislation that would require all scrap metal dealers in Oregon to pay for purchases with a check and to obtain photo identification from sellers. EWEB's Robertson expects such legislation to be introduced.

In Washington, legislation has been drafted for consideration this year that would impose the same requirements on scrap metal dealers as now imposed on pawnbrokers and second-hand dealers. Under the measure, scrap metal dealers would have to obtain the seller's signature and keep a record of the date of the transaction and the name of the seller, together with date of birth, driver's license number, license plate number and telephone numbers. In addition, the bill requires scrap metal dealers to retain any material they purchase for at least 30 days, a provision known as 'tag and hold.'

Most scrap metal dealers are opposed to a 'tag and hold' requirement. "We couldn't sort or prepare inventory," said City Scrap's Katz. "Where to store the material and how to identify it—the process would be a nightmare."

The Indiana Legislature is expected to consider a bill this year that would require detailed information on sellers, including a government-issued ID. Under the bill, scrap metal dealers would have to retain copies of sellers' identification for at least two years. It does not include a 'tag and hold' provision.

ISRI's Hirsch said the institute is considering model legislation based on its recommended practices. He added that ISRI is opposed to a 'tag and hold' requirement for copper because of the metal's price fluctuations. A decline in value would create "serious economic issues" for recyclers, said Hirsch. BPA's Reese said dealers, especially small ones, need rapid turnover to maintain cash flow. She thinks a 'tag and hold' requirement "could hurt everyone." In addition, many dealers receive 300-400 loads of material a day, not all of it copper. "Many of our members don't have the space to store tens of thousands of piles of material on site," said Hirsch.

ISRI would be interested in working with the American Public Power Association to develop legislative approaches that

would "meet both our needs," said Hirsch. Most ISRI members already track sellers and financial transactions and maintain records, he said. "That's something they see as part of the solution to this problem."

Some scrap metal dealers, like Manny Bodner, think it will take more than legislation to address the problem. "You can have all the laws and regulations you want on the books, but if law enforcement

doesn't communicate with the electric power industry, and the electric power industry doesn't communicate with [metal] suppliers—and the suppliers don't communicate with each other—the system won't work well."

The only way to thwart copper theft is to get everyone involved—utilities, recyclers, law enforcement, said Waste Control's Ensign. !

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